Inter-agency Working Group for Airborne Data and Telemetry Systems (IWGADTS)

Goals:

The Interagency Coordinating Committee for Airborne Geosciences Research and Applications (ICCAGRA) was established to improve cooperation and communication among agencies sponsoring airborne platforms and instruments for research and applications, and to serve as a resource for senior level management on airborne geosciences issues. The Interagency Working Group for Airborne Data and Telecommunications Systems (IWGADTS) is a subgroup to ICCAGRA for the purpose of developing recommendations leading to increased interoperability among airborne platforms and instrument payloads, producing increased synergy among research programs with similar goals, and enabling the suborbital layer of the Global Earth Observing System of Systems.

User Survey Highlights:

Desired aircraft commonality:

- Power and cable hookups
- Instrumentation racks
- Synchronized data timing
- Real-time feed
- Data file format
- Platform documentation
- Instrument documentation requirements

Recommendations:

- Timing: IRIG-B, NTP optional
- Data transmission: Ethernet UDP
- Real-time Feed: 1 second IWG1 packet
- Data Exchange: General CSV packet

In-progress:

- Data file formats: 2
  - One ASCII
  - One binary (NetCDF?)
- Metadata
- Data Discovery

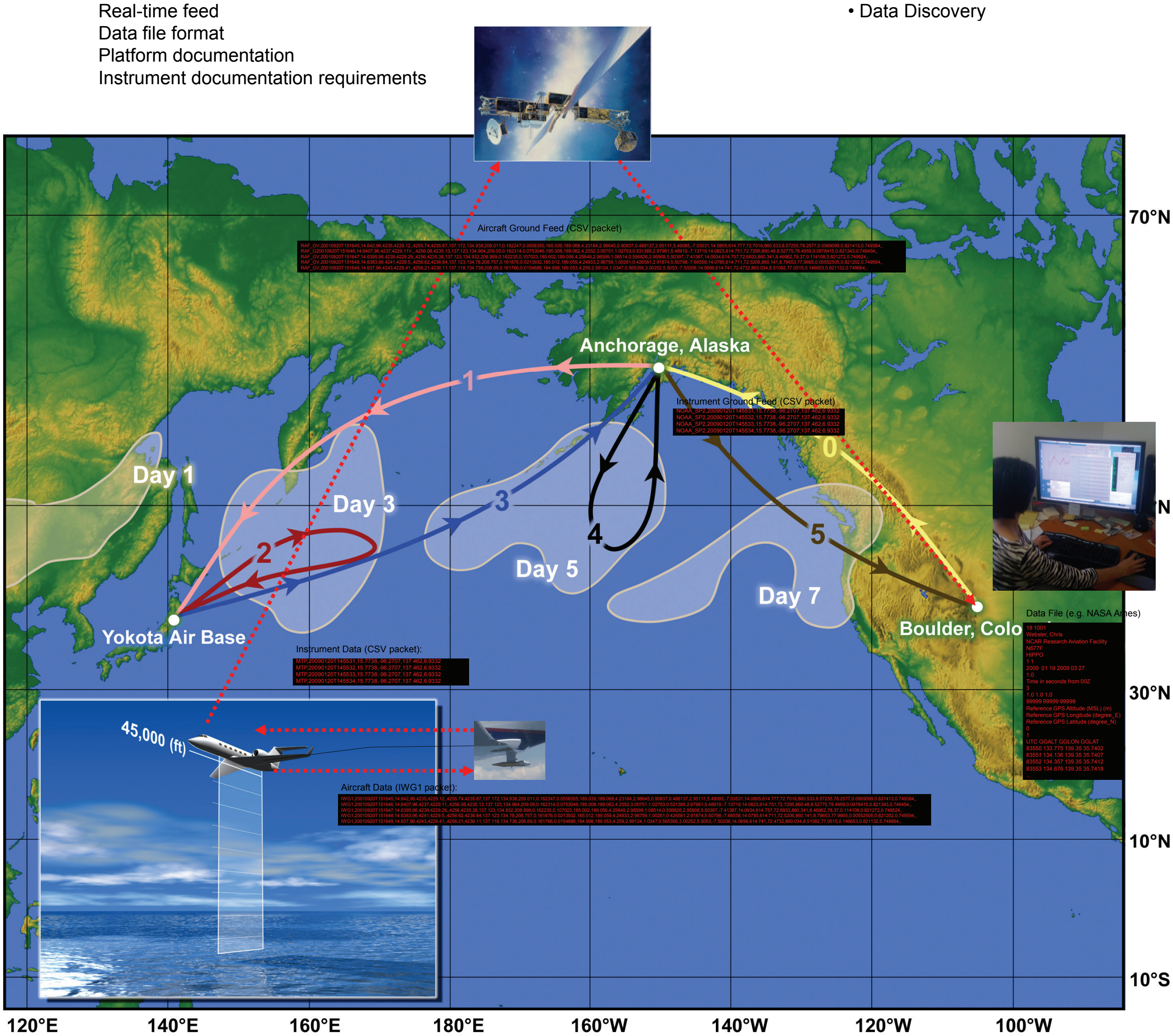

Figure 1: Examples of CSV data packets, from bottom to top:

1. Aircraft data feed is broadcast around the aircraft on Ethernet via UDP. Instruments still using RS232 can convert the UDP to RS232 with small commercially available converters.
2. Instrument Data is distributed around the aircraft on Ethernet via UDP. Instruments still using RS232 can convert from RS232 to UDP with small commercially available converters.
3. Aircraft and instrument data can be transmitted to the ground and made available in any manner.
4. Common data file formats are made available after the flight.

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